JUN 3 0 2004 &

CASE LA0083 (NP)

#### **CERTIFICATE OF MAILING**

Mereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

Kathleen Bodine

Type or print name

6-28-04

Date

### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF .

**WANSHENG LIU** 

**APPLICATION NO: 10/726,076** 

FILED: DECEMBER 2, 2003

FOR: PROCESS FOR REMOVING METALS FROM LIQUIDS

Mail Stop DD Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

#### INFORMATION DISCLOSURE STATEMENT

Sir:

Applicant believes this paper is being filed before the mailing date of a first Office Action on the merits, and so under 37 C.F.R. §1.97(b)(3) no fees are required. If a fee is deemed to be required, the Commissioner is hereby authorized to charge such fee to Deposit Account No. 19-3880.

In accordance with 37 C.F.R. §1.56, applicant wishes to call the Examiner's attention to the references cited on the attached form(s) PTO-1449.

Copies of these references are enclosed herewith.



The Examiner is requested to consider the foregoing information in relation to this application and indicate that each reference was considered by returning a copy of the initialed PTO 1449 form(s).

Bristol-Myers Squibb Company Patent Department P.O. Box 4000 Princeton, NJ 08543-4000 (609) 252-4014

Date:

Respectfully submitted,

Deanna L. Baxam

Attorney for Applicant

Reg. No. 45,266

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

**INFORMATION DISCLOSURE CITATION** 

Push several sheets if necessary)

ATTY. DOCKET NO. LA0083 (NP) APPLICATION NO. 10/726,076 APPLICANT WANSHENG LIU FILING DATE DECEMBER 2, 2003

Group

#### **U.S. PATENT DOCUMENTS**

| EXAMINER<br>INITIAL |    | DOCUMENT NUMBER | DATE     | NAME             | CLASS | SUBCLASS | FILING DATE |
|---------------------|----|-----------------|----------|------------------|-------|----------|-------------|
|                     | AA | 3,656,939       | 4/18/72  | Boehm et al.     |       |          |             |
|                     | AB | 5,061,773       | 10/29/91 | Panster et al.   |       |          |             |
|                     | AC | 5,458,787       | 10/17/95 | Rosin et al.     |       |          |             |
|                     | AD | 5,695,882       | 12/9/97  | Rosenberg        |       |          |             |
|                     | AE | 5,997,748       | 12/7/99  | Rosenberg et al. |       |          |             |
|                     | AF | 6,232,262       | 5/15/01  | Sielcken et al.  | -     |          |             |
|                     | AG | 6,291,722       | 9/18/01  | Li               |       |          |             |
|                     | АН |                 |          |                  |       |          |             |
|                     | Al |                 |          |                  |       |          |             |
|                     | AJ |                 |          |                  | , , , |          |             |
|                     | AK |                 |          |                  |       |          |             |
|                     | AL |                 |          |                  |       |          |             |

#### **FOREIGN PATENT DOCUMENTS**

|        | DOCUMENT NUMBER | DATE     | OFFICE | CLASS | SUBCLASS | TRAN<br>YES | SLATION<br>NO |
|--------|-----------------|----------|--------|-------|----------|-------------|---------------|
| AM     | EP 0 028 392    | 2/16/83  | EP.    |       |          |             |               |
| <br>AN | EP 0 285 218    | 12/21/94 | EP     |       |          |             |               |
| AO     | JP 1-128533     | 5/22/89  | JP     |       |          |             |               |
| AP     | JP 3-199392     | 8/30/91  | JP     |       |          |             |               |
| AQ     | JP 52-126685    | 10/24/77 | JP     |       |          |             |               |

#### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

| AR | Agris, C.H. et al., "Inhibition of Vesicular Stomatitis Virus Protein Synthesis and Infection by Sequence-Specific Oligodeoxyribonucleoside Methylphosphonates", Biochemistry, Vol. 25, No. 20, pp. 6268-6275 (1986)                  |
|----|---|
| AS | Anderson, N.G. et al., "Process Development of 5-Fluoro-3-[3-[4-(5-methoxy-4-pyrimidinyl)-1-piperazinyl]propyl]-1 <i>H</i> -indole Dihydrochloride", Organic Process Research & Development, Vol. 1, No. 4, pp. 300-310 (1997)        |
| АТ | Baba, Y. et al., "Extraction Equilibria of Palladium(II) and Platinum(IV) with Di(2-<br>ethylhexyl)aminophosphonic acid from Acidic Chloride Media", Solvent Extraction Research and<br>Development, Japan, Vol. 2, pp. 93-101 (1995) |

**EXAMINER** 

DATE CONSIDERED

<sup>\*</sup>EXAMINER: Initial of reference considered, whether or not citation is in conformance with MPEP 609: Draw a line through citation if not in conformance and not considered. Include a copy of this form with the next communication to applicant.

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

# **INFORMATION DISCLOSURE CITATION**

(Use several sheets if necessary)

ATTY. DOCKET NO. LA0083 (NP) APPLICATION NO. 10/726,076 APPLICANT WANSHENG LIU FILING DATE DECEMBER 2, 2003

Group

### **FOREIGN PATENT DOCUMENTS**

|             |       | DOCUMENT NUMBER         | DATE     | OFFICE          | CLASS | SUBCLAS     | TRAN | SLATION  |
|-------------|-------|-------------------------|----------|-----------------|-------|-------------|------|----------|
|             | 2AA   | JP 53-6296              | 1/20/78  | JP              |       | S           | YES  | NO       |
|             | 2AB   | JP 53-67619             | 6/16/78  | JP              |       |             |      |          |
|             |       |                         |          |                 |       |             |      |          |
|             | 2AC   | JP 53-67620             | 6/16/78  | JP              |       | ·····       |      |          |
|             | 2AD   | JP 59-133389            | 7/31/84  | JP              |       | - Line      |      |          |
|             | 2AE   | JP 60-50193             | 3/19/85  | JP              |       | <del></del> |      |          |
|             | 2AF   | WO 94/29226             | 12/22/94 | PCT             |       |             |      |          |
|             | 2AG   | WO 96/09985             | 4/4/96   | PCT             |       |             |      |          |
|             | 2AH   | WO 00/59506             | 10/12/00 | PCT             | · ·   |             |      |          |
|             | Al    | DE 107372               | 1/281899 | DE              |       |             |      |          |
|             | AJ    |                         |          |                 |       |             |      |          |
|             | AK    |                         |          |                 |       |             |      |          |
|             | AL    |                         |          |                 |       | •           |      |          |
|             | AM    | · · · · -               |          |                 |       |             |      |          |
|             | AN    |                         |          |                 |       |             |      |          |
|             | AO    |                         |          |                 |       |             |      |          |
|             | AP    | , , , , , , , , , , , , |          |                 |       |             |      |          |
|             | AQ    |                         |          |                 |       |             |      |          |
|             | AR    |                         |          |                 |       |             |      |          |
|             | AS    |                         | 1        |                 |       |             |      |          |
|             | AT    |                         |          |                 |       |             |      |          |
|             | AU    | <u>, ''=</u> '          | ·        |                 |       |             |      |          |
|             | AV    |                         |          |                 |       |             |      |          |
|             | AW    |                         |          |                 |       |             |      |          |
|             | AX    |                         | <u> </u> |                 |       |             |      |          |
|             | AY    |                         | <u> </u> |                 |       |             |      |          |
| <del></del> | AZ    |                         |          | <del> </del>    |       |             |      |          |
| EXA         | VINER | <u> </u>                | .1       | DATE CONSIDERED |       |             | Ц    | <u> </u> |

\*EXAMINER: Initial of reference considered, whether or not citation is in conformance with MPEP 609: Draw a line through citation if not in conformance and not considered. Include a copy of this form with the next communication to applicant.

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

## **INFORMATION DISCLOSURE CITATION**

(Use several sheets if necessary)

ATTY. DOCKET NO. LA0083 (NP) APPLICATION NO. 10/726,076 APPLICANT WANSHENG LIU FILING DATE DECEMBER 2, 2003

Group

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

| EXAMINER | DATE CONSIDERED  |
|----------|--|
| зап      | Makita, Y. et al., "Single-pole electrolysis cell and electrolysis using this cell", Chemical Abstracts, Vol. 115, No. 17573e, pp. 599-600 (1991)  |
| ЗАМ      | Kabanov, A.V. et al., "New approaches to targeting bioactive compounds", Journal of Controlled Release, Vol. 28, pp. 15-35 (1994)  |
| 3AL      | Kabanov, A.V. et al., "A new class of antivirals: antisense oligonucleotides combined with a hydrophobic substituent effectively inhibit influenza virus reproduction and synthesis of virus-specific proteins in MDCK cells", FEBS Letters, Vol. 259, No. 2, pp. 327-330 (1990) |
| зак      | Jiang, L. et al., "Study on the Extraction Separation of Rh from Pt, Pd, Ir by Radiotracer Method — Purification of Rh", He Huaxue Yu Fangshe Huaxue (Journal of Nuclear and Radiochemistry), Vol. 8, No. 2, pp. 108-112 (1986) (with English abstract)                          |
| ЗАЈ      | Ishihara, K. et al., "Removal of Palladium(II) from Aqueous and Organic Solutions by Polystyrene-bound Trimercaptotriazine", Chemistry Letters, pp. 1218-1219 (2000)   |
| ЗАІ      | Hodgson, C.P., "The Vector Void in Gene Therapy: Can viral vectors and transfection be combined to permit safe, efficacious, and targeted gene therapy?", Bio/Technology, Vol. 13, pp. 222-225 (1995)  |
| ЗАН      | Ghosh, A.K. et al., "Nonpeptidal P <sub>2</sub> Ligands for HIV Protease Inhibitors: Structure-Based Design, Synthesis, and Biological Evaluation", J. Med. Chem., Vol. 39, No. 17, pp. 3278-3290 (1996)   |
| 3AG      | Foersterling, HU., "Investigations of the Adsorption of Palladium on Carbonaceous Adsorberts Modified with Dimethylglyoxime — I. The Adsorption of Dimethylglyoxime on Selected Carbonaceous Adsorbents", Carbon, Vol. 28, No. 1, pp. 27-34 (1990)                               |
| ЗАБ      | Diels, L. et al., "The use of bacteria immobilized in tubular membrane reactors for heavy metal recovery and degradation of chlorinated aromatics", Journal of Membrane Science, Vol. 100, pp. 249-258 (1995)  |
| ЗАЕ      | De Mesmaeker, A. et al., "Antisense Oligonucleotides", Acc. Chem. Res., Vol. 28, pp. 366-374 (1995)  |
| 3AD      | Crooke, R.M., "In vitro toxicology and pharmacokinetics of antisense oligonucleotides", Anti-Cancel Drug Design, Vol. 6, pp. 609-646 (1991)  |
| зас      | Collier, A.C. et al., "Combination therapy with zidovudine, didanosine and saquinavir", Antiviral Research, Vol. 29, p. 99 (1996)  |
| зав      | Chung, DY. et al., "Formation of Palladium Precipitate by Hydrazine in a Simulated High Level Liquid Waste", Journal of Radioanalytical and Nuclear Chemistry, Articles, Vol. 204, No. 2, pp. 265-274 (1996)   |
| ЗАА      | Cazenave, C. et al., Chapter 3: "Antisense Oligonucleotides", Antisense Nucleic Acids and Proteins: Fundamentals and Applications, Marcel Dekker, Inc., publ., Mol, J.N.M. et al., eds., pp. 47-93 (1991)  |

\*EXAMINER: Initial of reference considered, whether or not citation is in conformance with MPEP 609: Draw a line through citation if not in conformance and not considered. Include a copy of this form with the next communication to applicant.

**U.S. DEPARTMENT OF COMMERCE** PATENT AND TRADEMARK OFFICE

**INFORMATION DISCLOSURE CITATION** 10/726,076 (Use several sheets if necessary) **APPLICANT WANSHENG LIU** 

ATTY. DOCKET NO. LA0083 (NP) APPLICATION NO. **FILING DATE** DECEMBER 2, 2003

Group

### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

| EXAMINER | DATE CONSIDERED   |
|----------|---|
| 4AN      | Suyama, K. et al., "A New Biomaterial, Hen Egg Shell Membrane, to Eliminate Heavy Metal Ion from Their Dilute Waste Solution", Applied Biochemistry and Biotechnology, Vol. 45/56, pp. 871-879 (1994)   |
| 4AM      | Stull, R.A. et al., "Antigene, Ribozyme and Aptamer Nucleic Acid Drugs: Progress and Prospects", Pharmaceutical Research, Vol. 12, No. 4, pp. 465-483 (1995)  |
| 4AL      | Shukla, J.P. et al., "Selective Solvent Extraction of Palladium (II) with Thiacrowns from Aqueous Chloride/Nitrate Reprocessing Waste Solutions", Nuclear Science Journal, Vol. 33, No. 1, pp. 39-51 (1996)   |
| 4AK      | Rosso, V.W. et al., "Removal of Palladium from Organic Reaction Mixtures by Trimercaptotriazine", Organic Process Research & Development, Vol. 1, No. 4, pp. 311-314 (1997)   |
| 4AJ      | Raskin, I. et al., "Method for removing soluble metals from an aqueous phase", Chemical Abstracts, Vol. 122, No. 169223y, p. 586 (1995)   |
| 4AI      | Radová, Z. et al., "Sorption of Pd(II) from Aqueous Solutions of Chlorocomplexes by the Copolymer of Glycidylmethacrylate and Ethylenedimethacrylate Modified with Ethylenediamine. The Structure of Complexes", Die Angewandte Makromolekulare Chemie, Vol. 81, pp. 55-62 (1979)                     |
| 4AH      | Pearson, R. G., "Hard and Soft Acids and Bases", Copyright 1973, Dowden, Hutchinson & Ross, Inc., Strousdburg, Pennsylvania.  |
| 4AG      | Pearson, R.G., "Hard and Soft Acids and Bases, HSAB, Part I: Fundamental principles", Journal of Chemical Education, Vol. 45, No. 9, pp. 581-587 (1968)   |
| 4AF      | Pearson, R.G., "Hard and Soft Acids and Bases", Journal of the Americal Chemical Society, Vol. 85, No. 22, pp. 3533-3539 (1963)   |
| 4AE      | Nogami, M. et al., "Ion-Exchange Selectivity of Tertiary Pyridine-Type Anion-Exchange Resin for Treatment of Spent Nuclear Fuels", Nuclear Technology, Vol. 115, pp. 293-297 (1996)   |
| 4AD      | Mimura, H. et al., "Selective Separation of Palladium by Insoluble Ferrocyanide-Alginate Composites", Tohoku Daigaku Sozai Kogaku Kenkyusho Iho, Vol. 56, pp. 1-8 (2000) (with English abstract)  |
| 4AC      | Milligan, J.F. et al., "Development of Antisense Therapeutics: Implications for Cancer Gene Therapy", Gene Therapy for Neoplastic Diseases, Annals of the New York Academy of Sciences, Vol. 716, The New York Academy of Sciences, New York, NY, publ., Huber, B.E. et al., eds., pp. 228-241 (1994) |
| 4AB      | Masri, M.S. et al., "Chemical Modification of Insoluble Polymers for Certain End Uses", Polymer Preprints: Papers presented at Chicago meeting, Division of Polymer Chemistry, Inc., American Chemical Society, Vol. 16, No. 2, pp. 70-75 (1975)  |
| 4AA      | Maryanoff, C.A. et al., Chapter 18: "Catalysis from the Perspective of an Organic Chemist: Common Problems and Possible Solutions", Catalysis of Organic Reactions, Marcel Dekker, Inc., publ., Rylander, P.N. et al., eds., pp. 359-379 (1988)   |

<sup>\*</sup>EXAMINER: Initial of reference considered, whether or not citation is in conformance with MPEP 609: Draw a line through citation if not in conformance and not considered. Include a copy of this form with the next communication to applicant.

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

# **INFORMATION DISCLOSURE CITATION**

(Use several sheets if necessary)

ATTY. DOCKET NO. LA0083 (NP) APPLICATION NO. 10/726,076 APPLICANT WANSHENG LIU FILING DATE DECEMBER 2, 2003

Group

### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent pages, Etc.)

|         | 5AA | Suyama, K. et al., "Biosportion of Precious Metal Ions by Chicken Feather", Applied Biochemistry and Biotechnology, Vol. 57/58, pp. 67-74 (1996)  |
|---------|-----|---|
|         | 5AB | Wei, YZ. et al., "Adsorption and Elution Behavior of Platinum-Group Metals in Nitric Acid Medium", Ion Exchange Developments and Applications, Vol. 182, pp. 174-181 (1996)   |
|         | 5AC | Wen, D. et al., "Study on magnetic chelating resin. II. Preparation of PSE2 and its adsorption properties to metal ions", Chemical Abstracts, Vol. 123, No. 341826f, p. 66 (1995)   |
|         | 5AD | Yordanov, A.T. et al., "Solvent extraction of divalent palladium and platinum from aqueous solutions of their chloro complexes using an <i>N,N</i> -dimethyldithiocarbamoylethoxy substituted calix[4]arene", Inorganica Chimica Acta, Vol. 240, pp. 441-446 (1995) |
|         | AE  | Zuo, G. et al., "Extraction of Noble Metals by Sulfur-Containing Reagents and Solvent Impregnated Resins", Solvent Extraction and Ion Exchange, Vol. 13, No. 5, pp. 879-899 (1995)  |
|         | AF  | De, A. K., "Solvent Extraction of Metals", Van Nostrand Reinhold Company Ltd., New York, 1970.  |
| ,       | AG  |   |
| ****    | АН  |   |
|         | Al  |   |
|         | AJ  |   |
|         | AK  |   |
|         | AL  |   |
|         | АМ  |   |
|         | AN  |   |
| EXAMINE | R   | DATE CONSIDERED   |

\*EXAMINER: Initial of reference considered, whether or not citation is in conformance with MPEP 609: Draw a line through citation if not in conformance and not considered. Include a copy of this form with the next communication to applicant.